
Exercising for the health of my stem cells

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The New York Times health blog has a story today adding yet another reason for regular exercise: It's good for stem cells in your bone marrow. When I run, I'm not generally thinking about my bone marrow, I admit. But there are times when I'm thinking about fat (or rather, how much of it I want to eat later in the day), and it turns out those thoughts apply to my bone marrow as well as to other places.

From the New York Times:

“ This idea is the focus of a series of intriguing recent experiments by Janet Rubin, a professor of medicine at the University of North Carolina and other researchers. For the work, scientists removed bone marrow cells from mice and cultured them. The cells in question, mesenchymal stem cells, are found in bone marrow in both animals and people, waiting for certain molecular signals to tell them to transform into either bone cells, fat cells or, less commonly, something else.

Just to be clear, these mesenchymal stem cells are different than the blood-forming stem cell cells also found in the bone marrow. In a series of experiments involving either mice or the mouse mesenchymal stem cells, exercise pushed the stem cells to form bone while high sugar levels and inactivity pushed those cells toward fat. Admittedly, simulating exercise for a plate of cells seems a bit abstract - they vibrated the cells and equated that mechanical force with jogging.

“ Many questions remain, of course. It's not clear, for one, whether fat cells generated in bone marrow remain in the marrow or move around to pad, say, the thighs. It's also not known how exercise affects stem cells located outside the bone marrow. Can it prevent the birth of fat cells all over the body? In Clinton Rubin's experiments with mice, the vibrated animals wound up with less overall body fat than the control mice, but the reasons are unknown.

Despite these questions, the general idea of producing more bone and less fat seems like a good one.

At CIRM, we're focused on finding new ways of either treating or understanding disease through adult, embryonic, reprogrammed or cancer stem cells. But while we're looking for those new cures it can't hurt to keep the stem cells we have as happy and healthy and as focused on good-bone not fat-as possible.

- A.A.

Tags: exercise, mesenchymal

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